

Texas Water Development Board



Water **Conditions**

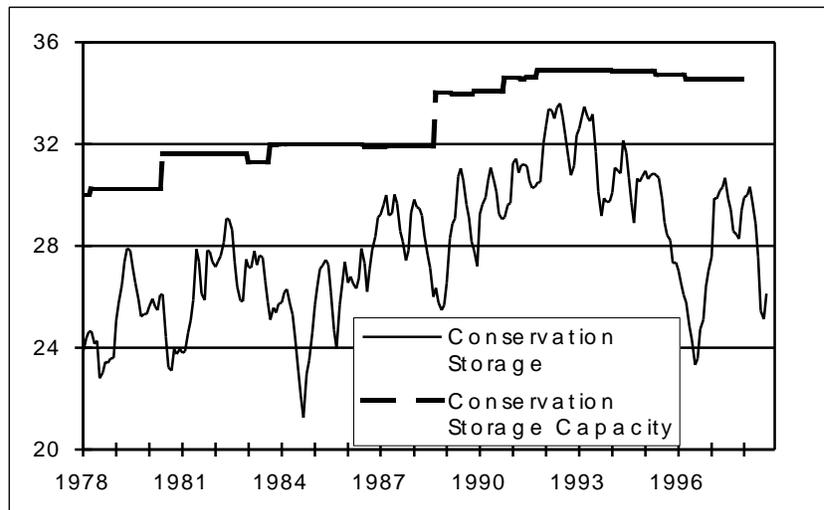
RESERVOIR STORAGE

October 1998

Near the end of October, the 77 reservoirs monitored for this report held 26,140,983 acre-feet in conservation storage. This was 76 percent of the conservation storage capacity of the State's major reservoirs. Compared to the end of September, storage has increased 872,819 acre-feet. Compared to this month last year, storage has decreased 2,306,957 acre-feet.

Of the monitored reservoirs, 21 held 100 percent or more of conservation storage near the end of October. Reservoir contents generally increased or remained the same in all regions of the state except the High Plains and Low Rolling Plains, where conservation storage contents continue to drop. The High Plains region contains only 53% storage capacity and fell by 1% since last month, and the Low Rolling Plains holds only 33% of capacity and fell another 3% since October.

CONSERVATION STORAGE DATA FOR SELECTED MAJOR TEXAS RESERVOIRS



Current data are based on elevation near end of month at 77 reservoirs that represent 98 percent of total conservation storage capacity in Texas reservoirs having a capacity of 5,000 acre-feet or more.

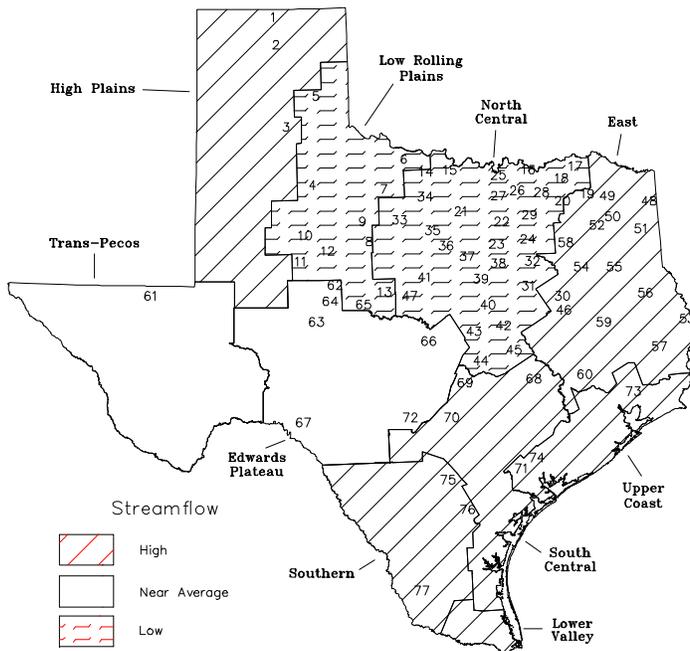
STREAMFLOW

Streamflow conditions across Texas ranged from very high to very low during the month of October. Significant rainfall fell over the East Texas, Upper Coast, South Central, and Southern climatic regions. The Low Rolling Plains and North Central climatic regions remained dry. The following is a summary of the measured flows at various index stations across the State.

The Upper Coast and South Central regions experienced extremely high flows due to heavy rainfall and the high moisture antecedent conditions from September. Monthly average flows on Spring Creek near Spring, the Navidad River near Hallettsville, the Lavaca River near Edna, and Cibolo Creek near Falls City are exceeded only 1% of the time, and that on the San Bernard River near Boling is exceeded less than 2% of the time. On the opposite extreme, no flow was reported on Denton Creek near Justin, Hubbard Creek below Albany, Elm Creek near Ballinger, and North Concho River near Carlsbad. Flows on the Pecos River near Girvin in the Trans Pecos Region were near normal.

STREAMFLOW CONDITIONS FOR OCTOBER COMPARED WITH PAST RECORD

Reservoirs Shown on Map



- | | |
|----------------------------------|-----------------------------|
| 1. Palo Duro Reservoir | 40. Waco Lake |
| 2. Lake Meredith | 41. Proctor Lake |
| 3. MacKenzie Reservoir | 42. Belton Lake |
| 4. White River Lake | 43. Stillhouse Hollow Lake |
| 5. Greenbelt Reservoir | 44. Lake Georgetown |
| 6. Lake Kemp | 45. Granger Lake |
| 7. Miller's Creek Reservoir | 46. Lake Limestone |
| 8. Fort Phantom Hill Reservoir | 47. Lake Brownwood |
| 9. Lake Stamford | 48. Wright Patman Lake |
| 10. Lake J. B. Thomas | 49. Lake Cypress Springs |
| 11. Lake Colorado City | 50. Lake Bob Sandlin |
| 12. Champion Creek Reservoir | 51. Lake O' the Pines |
| 13. Hords Creek Lake | 52. Lake Fork Reservoir |
| 14. Lake Kickapoo | 53. Toledo Bend Reservoir |
| 15. Lake Arrowhead | 54. Lake Palestine |
| 16. Lake Texoma | 55. Lake Tyler |
| 17. Pat Mayse Lake | 56. Sam Rayburn Reservoir |
| 18. Cooper Lake | 57. B. A. Steinhagen Lake |
| 19. Lake Sulphur Springs | 58. Cedar Creek Reservoir |
| 20. Lake Tawakoni | 59. Lake Livingston |
| 21. Bridgeport Reservoir | 60. Lake Conroe |
| 22. Eagle Mountain Reservoir | 61. Red Bluff Reservoir |
| 23. Benbrook Lake | 62. E. V. Spence Reservoir |
| 24. Joe Pool Lake | 63. Twin Buttes Reservoir |
| 25. Ray Roberts Lake | 64. O. C. Fisher Lake |
| 26. Lewisville Lake | 65. O. H. Ivie Reservoir |
| 27. Grapevine Lake | 66. Lake Buchanan |
| 28. Lavon Lake | 67. Intl. Amistad Reservoir |
| 29. Lake Ray Hubbard | 68. Somerville Lake |
| 30. Richland-Chambers Creek Lake | 69. Lake Travis |
| 31. Navarro Mills Lake | 70. Canyon Lake |
| 32. Bardwell Lake | 71. Coletto Creek Reservoir |
| 33. Hubbard Creek Reservoir | 72. Medina Lake |
| 34. Lake Graham | 73. Lake Houston |
| 35. Possum Kingdom Lake | 74. Lake Texana |
| 36. Lake Palo Pinto | 75. Choke Canyon Reservoir |
| 37. Lake Granbury | 76. Lake Corpus Christi |
| 38. Lake Pat Cleburne | 77. Intl. Falcon Reservoir |
| 39. Whitney Lake | |

CONSERVATION STORAGE DATA FOR SELECTED MAJOR TEXAS RESERVOIRS

Name of Lake or Reservoir	No. on Map	Conservation	Conservation		Change since		Change since		
		Storage Capacity (acre-feet)	Storage Late Oct 1998 (acre-feet)	(%)	Late Sep 1998 (acre-feet)	(%)	Late Oct 1997 (acre-feet)	(%)	
HIGH PLAINS									
Palo Duro Reservoir	1	60,900	6,273	10	2,073	3	-2,337	-4	
Lake Meredith (Texas)	2	500,000	316,000	63	-6,000	-1	-75,390	-15	
Lake Meredith (Texas and Oklahoma)	(2)	779,560	316,000	41	6,000	0	-75,390	-10	
MacKenzie Reservoir	3	46,250	7,118	15	-72	0	-2,052	-4	
White River Lake	4	31,850	9,307	29	-723	-2	-3,853	-12	
TOTAL		639,000	338,698	53	-4,722	-1	-83,632	-13	
LOW ROLLING PLAINS									
Greenbelt Reservoir	5	58,200	24,300	42	-700	-1	-2,870	-5	
Lake Kemp	6	319,600	145,000	45	-13,000	-4	-95,830	-30	
Miller's Creek Reservoir	7	27,890	14,238	51	-892	-3	2,398	9	
Fort Phantom Hill Reservoir	8	70,030	26,119	37	-3,150	-4	-36,681	-52	
Lake Stamford	9	52,700	19,700	37	-900	-2	-10,400	-20	
Lake J. B. Thomas	10	202,300	7,224	4	-896	0	-10,276	-5	
Lake Colorado City	11	30,800	15,900	52	-200	-1	-4,500	-15	
Champion Creek Reservoir	12	41,600	10,700	26	-1,500	-4	-9,500	-23	
Hords Creek Lake	13	8,600	5,356	62	-283	-3	-1,624	-19	
TOTAL		811,720	268,537	33	-21,521	-3	-169,283	-21	
NORTH CENTRAL									
Lake Kickapoo	14	106,000	52,625	50	-615	-1	-6,365	-6	
Lake Arrowhead	15	262,100	176,000	67	-6,000	-2	-24,440	-9	
Lake Texoma	16	2,722,300	2,132,887	78	-40,560	-1	-589,413	-22	
Pat Mayse Lake	17	124,500	101,674	82	-332	0	-8,126	-7	
Cooper Lake	18	273,000	273,000	100	0	0	22,180	8	
Lake Sulphur Springs	19	17,710	17,230	97	1,350	8	430	2	
Lake Tawakoni	20	936,200	879,000	94	83,000	9	13,600	1	
Bridgeport Reservoir	21	374,830	289,337	77	-10,663	-3	-48,663	-13	
Eagle Mountain Reservoir	22	178,380	145,438	82	-2,562	-1	-17,322	-10	
Benbrook Lake	23	88,200	68,998	78	-402	0	-15,712	-18	
Joe Pool Lake	24	175,800	151,109	86	-2,891	-2	-13,761	-8	
Ray Roberts Lake	25	798,760	715,511	90	-11,489	-1	-32,909	-4	
Lewisville Lake	26	555,000	440,820	79	-19,180	-3	-46,860	-8	
Grapevine Lake	27	187,700	147,500	79	-2,500	-1	-12,660	-7	
Levon Lake	28	443,800	288,037	65	-10,963	-2	-68,483	-15	
Lake Ray Hubbard	29	490,000	416,624	85	11,624	2	-25,776	-5	
Richland-Chambers Creek Lake	30	1,103,820	1,103,820	100	63,820	6	91,500	8	
Navarro Mills Lake	31	55,810	55,810	100	10,910	20	5,970	11	
Bardwell Lake	32	53,580	49,869	93	4,669	9	-641	-1	
Hubbard Creek Reservoir	33	317,800	261,000	82	-9,000	-3	-33,000	-10	
Lake Graham	34	45,000	39,500	88	-1,700	-4	-5,500	-12	
Possum Kingdom Lake	35	551,820	255,589	46	-14,411	-3	-222,771	-40	
Lake Palo Pinto	36	42,200	27,806	66	-12,194	-29	-7,454	-18	
Lake Granbury	37	135,680	122,824	91	-2,176	-2	-12,856	-9	
Lake Pat Cleburne	38	25,300	17,800	70	2,930	12	-3,200	-13	
Whitney Lake	39	622,800	431,320	69	-19,680	-3	-100,500	-16	
Waco Lake	40	144,500	144,500	100	23,500	16	9,760	7	
Proctor Lake	41	55,590	34,124	61	-3,276	-6	-13,066	-24	
Belton Lake	42	434,500	434,500	100	26,500	6	5,210	1	
Stillhouse Hollow Lake	43	226,060	226,060	100	10,060	4	1,210	1	
Lake Georgetown	44	37,010	37,010	100	8,611	23	4,110	11	
Granger Lake	45	54,280	54,280	100	0	0	0	0	
Lake Limestone	46	215,750	215,000	100	37,000	17	35,450	16	
Lake Brownwood	47	143,400	113,213	79	-3,047	-2	-14,787	-10	
TOTAL		11,999,180	9,919,815	83	110,333	1	-1,134,845	-9	

CONSERVATION STORAGE DATA FOR SELECTED MAJOR TEXAS RESERVOIRS

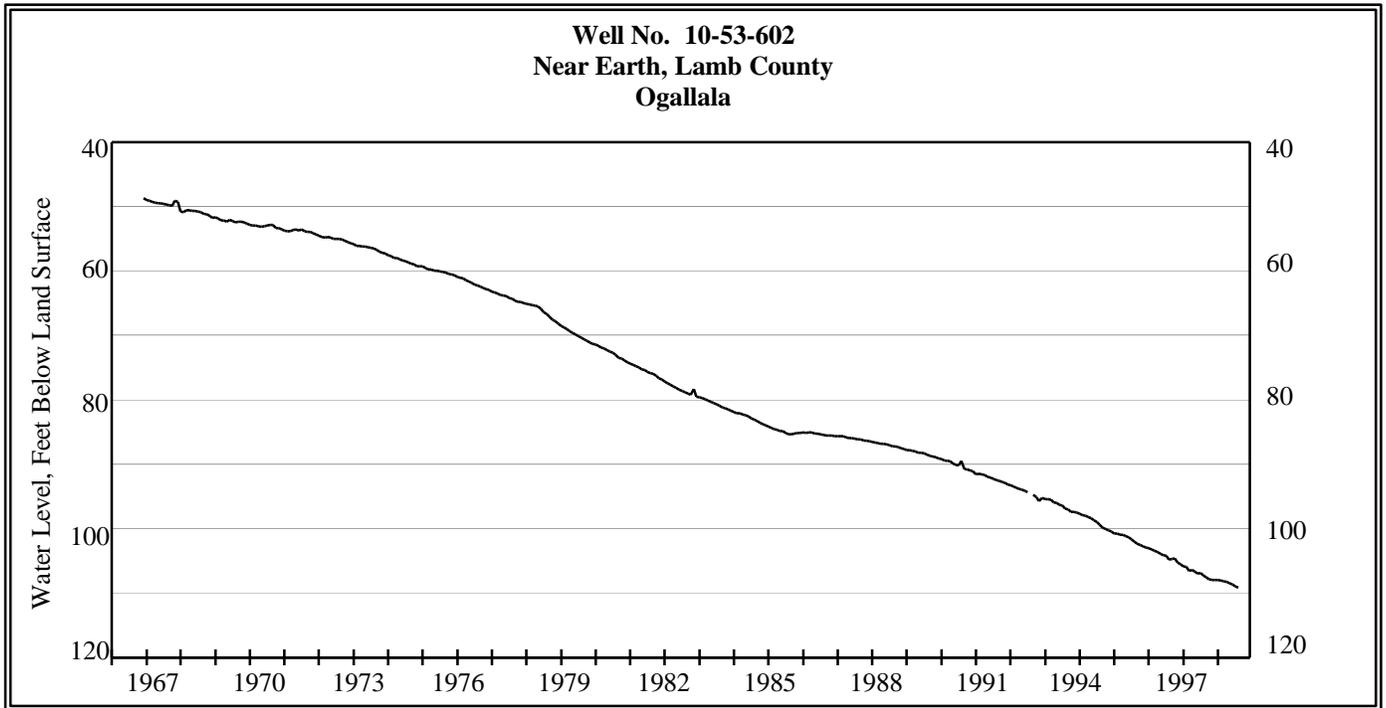
Name of Lake or Reservoir	No. on Map	Conservation Storage Capacity (acre-feet)	Conservation Storage Late Oct 1998		Change since Late Sep 1998		Change since Late Oct 1997		
			(acre-feet)	(%)	(acre-feet)	(%)	(acre-feet)	(%)	
EAST									
Wright Patman Lake	48	142,700	142,700	100	0	0	0	0	
Lake Cypress Springs	49	66,800	66,800	100	1,870	3	740	1	
Lake Bob Sandlin	50	202,300	202,300	100	2,300	1	9,780	5	
Lake O' the Pines	51	252,000	244,207	97	15,207	6	-7,793	-3	
Lake Fork Reservoir	52	635,200	635,200	100	6,200	1	25,910	4	
Toledo Bend Reservoir	53	4,472,900	3,550,000	79	160,000	4	-410,000	-9	
Lake Palestine	54	411,300	387,704	94	34,344	8	6,304	2	
Lake Tyler	55	73,700	72,822	99	8,242	11	-878	-1	
Sam Rayburn Reservoir	56	2,876,300	2,125,680	74	-14,320	0	-469,570	-16	
B. A. Steinhagen Lake	57	94,200	86,015	91	2,115	2	3,255	3	
Cedar Creek Reservoir	58	637,050	637,050	100	87,050	14	0	0	
Lake Livingston	59	1,750,000	1,739,999	99	199,999	11	-10,001	-1	
Lake Conroe	60	429,900	417,000	97	19,000	4	6,030	1	
TOTAL		12,044,350	10,307,477	86	522,007	4	-846,223	-7	
TRANS-PECOS									
Red Bluff Reservoir	61	307,000	52,740	17	3,710	1	-7,540	-2	
TOTAL		307,000	52,740	17	3,710	1	-7,540	-2	
EDWARDS PLATEAU									
E. V. Spence Reservoir	62	484,800	77,100	16	-3,400	-1	-49,900	-10	
Twin Buttes Reservoir	63	177,800	12,674	7	-5,826	-3	-29,726	-17	
O.C. Fisher Lake	64	119,200	13,614	11	-735	-1	-3,156	-3	
O. H. Ivie Reservoir	65	554,340	438,000	79	-13,000	-2	-75,860	-14	
Lake Buchanan	66	896,980	781,836	87	3,064	0	-50,664	-6	
Amistad Reservoir (Texas)	67	1,771,030	876,000	49	39,000	2	-45,780	-3	
Amistad Reservoir (Texas and Mexico)	(67)	3,151,300	1,244,000	39	45,000	1	-251,760	-8	
TOTAL		4,004,150	2,199,224	55	19,103	0	-255,086	-6	
SOUTH CENTRAL									
Somerville Lake	68	155,060	155,060	100	0	0	0	0	
Lake Travis	69	1,144,100	1,039,409	91	132,516	12	-13,691	-1	
Canyon Lake	70	385,600	385,600	100	8,600	2	4,080	1	
Coletto Creek Reservoir	71	35,060	35,060	100	0	0	0	0	
Medina Lake	72	254,000	254,000	100	23,000	9	20,600	8	
TOTAL		1,973,820	1,869,129	95	164,116	8	10,989	1	
UPPER COAST									
Lake Houston	73	128,860	128,860	100	0	0	0	0	
Lake Texana	74	157,900	157,900	100	0	0	0	0	
TOTAL		286,760	286,760	100	0	0	0	0	

CONSERVATION STORAGE DATA FOR SELECTED MAJOR TEXAS RESERVOIRS

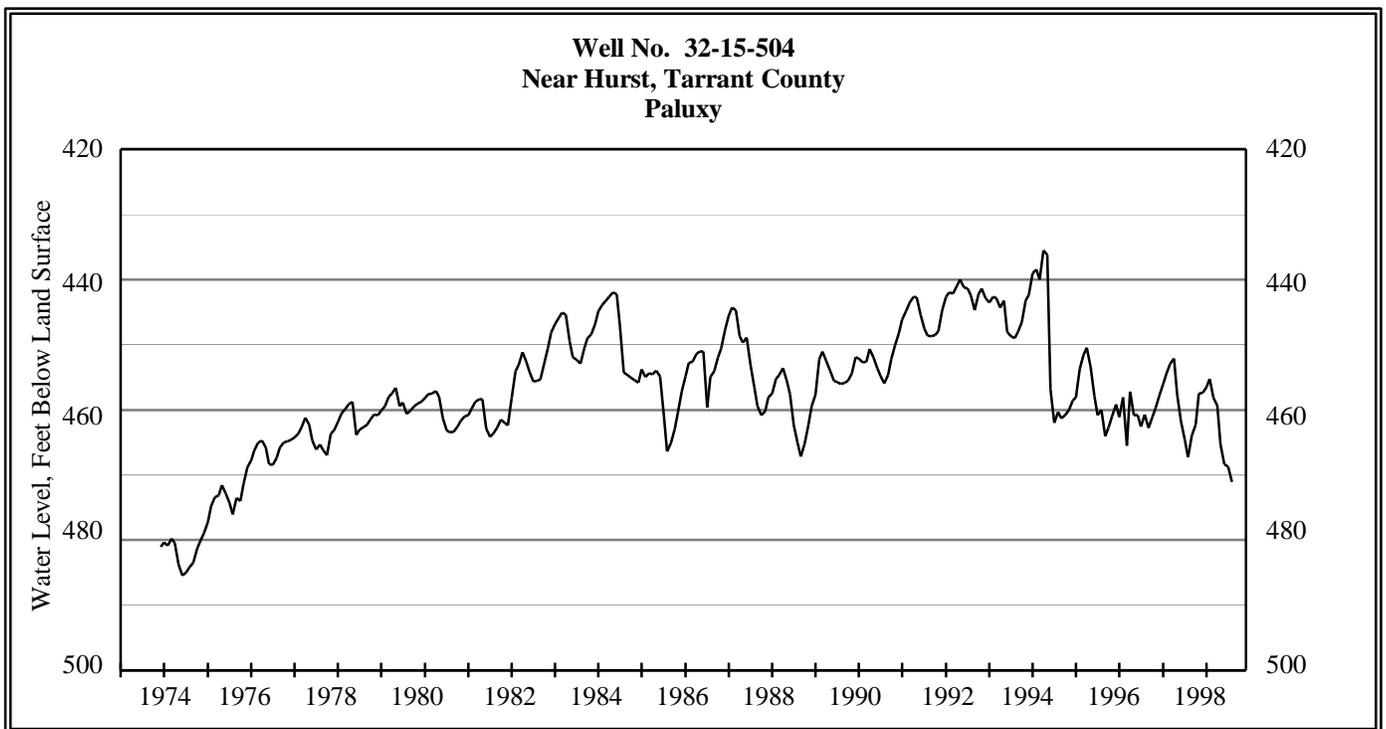
Name of Lake or Reservoir	No. on Map	Conservation Storage Capacity (acre-feet)	Conservation Storage Late Oct 1998 (acre-feet) (%)	Change since Late Sep 1998 (acre-feet) (%)	Change since Late Oct 1997 (acre-feet) (%)
SOUTHERN					
Choke Canyon Reservoir	75	695,260	354,340 51	49,793 7	67,710 10
Lake Corpus Christi	76	241,240	186,263 77	0 0	3,463 1
Falcon Reservoir (Texas)	77	1,555,120	358,000 23	30,000 2	107,490 7
Falcon Reservoir (Texas and Mexico)	(77)	2,653,290	639,000 24	69,000 3	149,330 6
TOTAL		2,491,620	898,603 36	79,793 3	178,663 7
STATE TOTAL		34,557,600	26,140,983 76	872,819 3	-2,306,957 -7

NOTES: Conservation storage capacity is the space available to store water above the level of invert of lowest outlet works and below the level of top of conservation pool or normal maximum operating level. Conservation storage refers to the volume of water held within the conservation storage space. Not included is any water in flood control storage (above the top of conservation pool or normal maximum operating level), or any water in so called dead storage (in the bottom of the reservoir, below the invert of lowest outlet works and consequently not removable by gravity flow alone.) Percentages are based on the conservation storage capacity of and the conservation storage in the reservoirs for date shown. Current data are based on elevations near end of month at 77 reservoirs that together represent 98 percent of the total conservation storage capacity of major Texas reservoirs (those with capacity of 5,000 acre-feet or more each). Figures in parenthesis for Lake Meredith represent the total conservation storage excluding 58,014 acre-feet of dead storage and are not included in State total. Preliminary figures are shown for the United States' share of conservation storage in International Amistad and International Falcon Reservoirs; the estimates may be subject to revision on completion Texas (United States' share) and Mexico and are not included in State total.

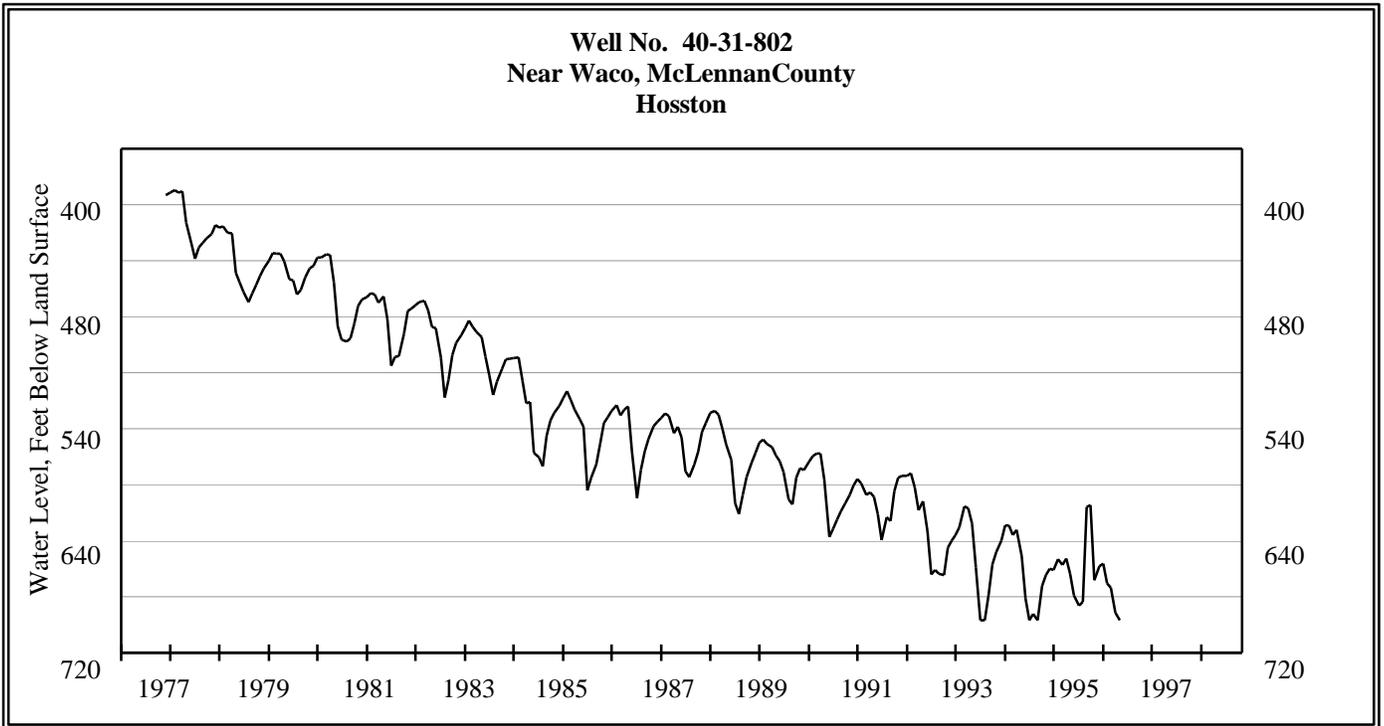
GROUND WATER LEVELS IN OBSERVATION WELLS



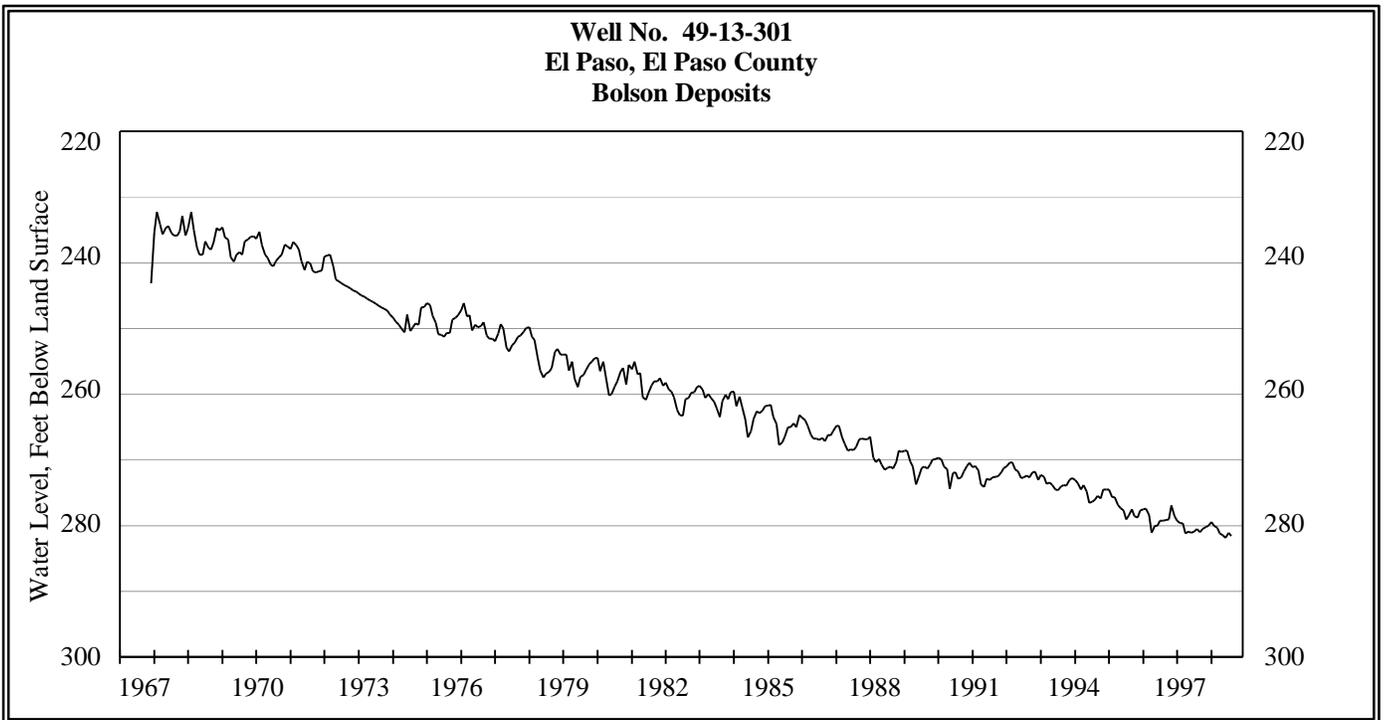
The October water-level measurement in this Ogallala aquifer well, elevation 3667 feet above sea level, was 110.01 feet below land surface. This was 0.81 of a foot below the August measurement, 2.41 feet below last year's measurement, and 81.86 feet below the initial measurement recorded in 1950.



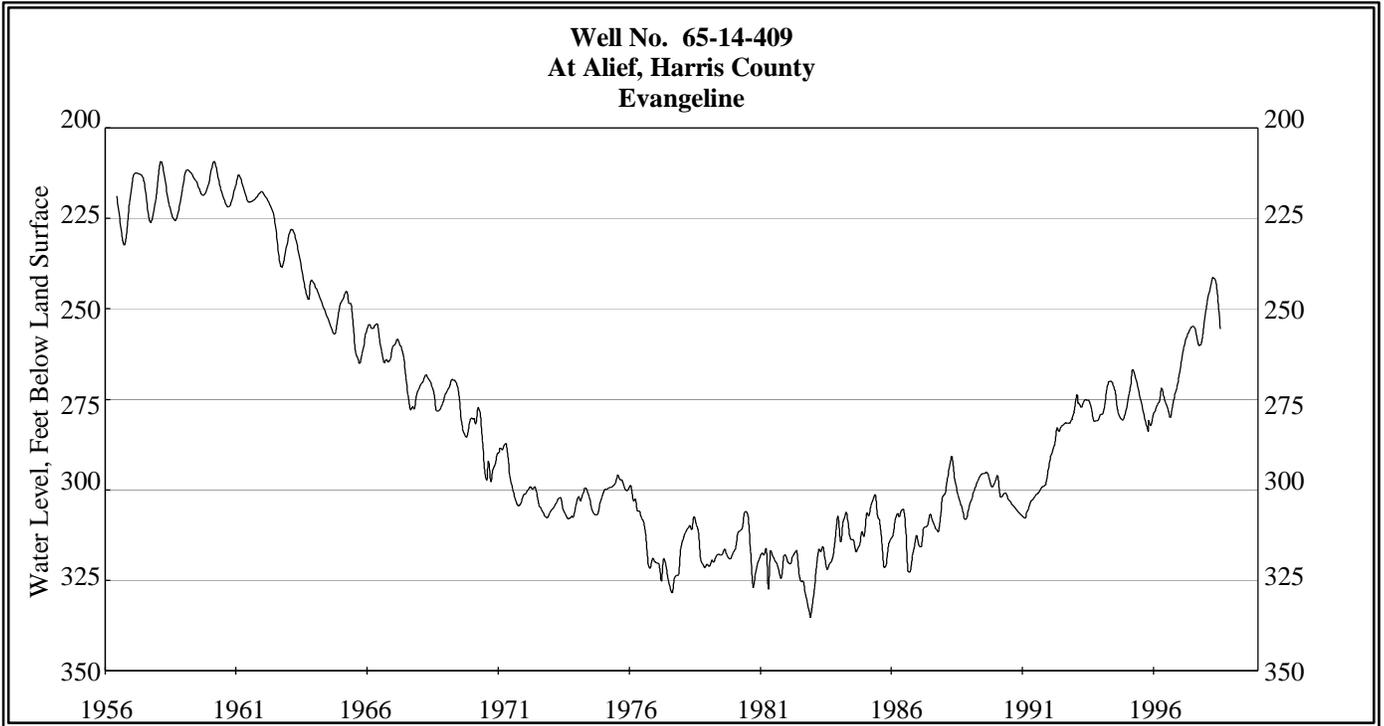
The October water-level measurement in this Paluxy aquifer well, elevation 535 feet above sea level, was 471.11 feet below land surface. This measurement is 0.5 of a foot above the September measurement of 471.61, 7.17 feet below last year's measurement, and 77.72 feet below the initial measurement recorded in 1953.



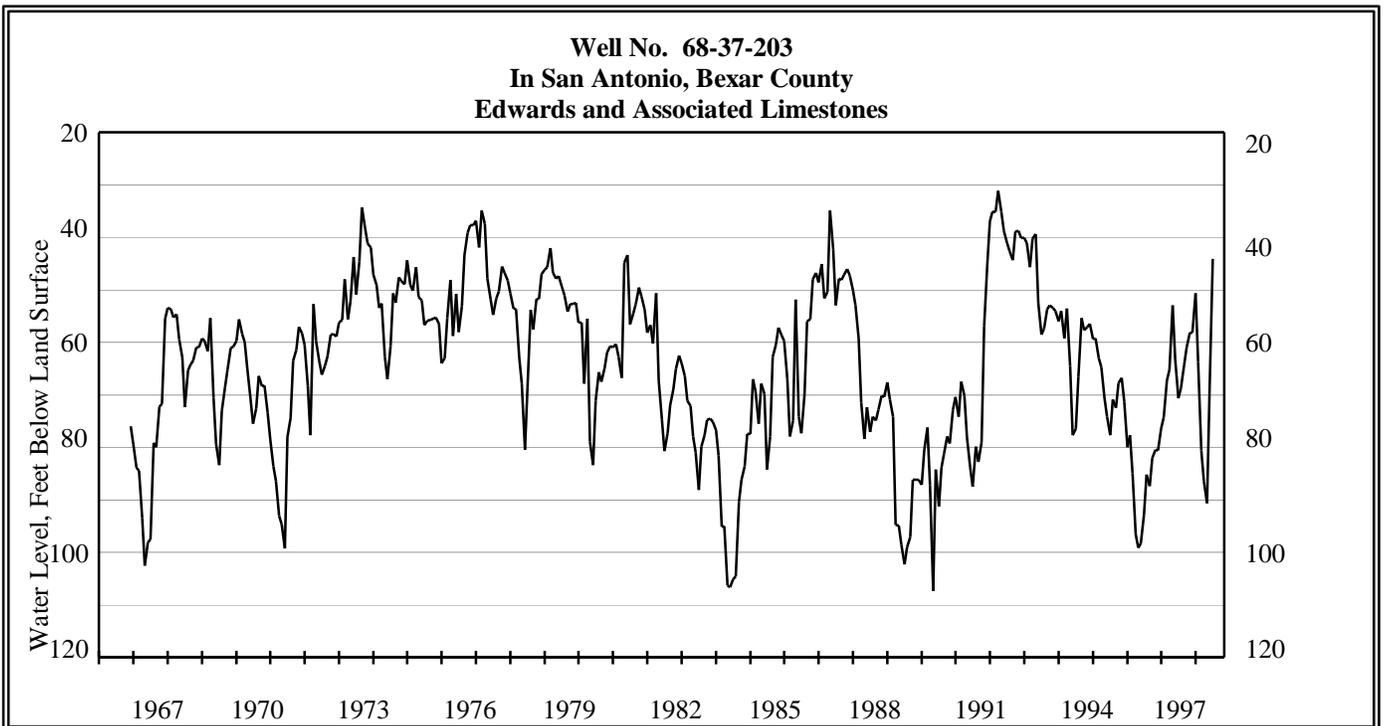
The October water-level measurement in this Hosston Formation aquifer well, elevation 593 feet above sea level, was not available this month due to continued casing problems.



The October water-level measurement in this Bolson Deposits aquifer well, elevation 3882 feet above sea level, was 281.55 feet below land surface. This was 0.36 of a foot below the September measurement of 281.19, 0.99 of a foot below last year's measurement, and 49.65 feet below the initial measurement recorded in 1964.

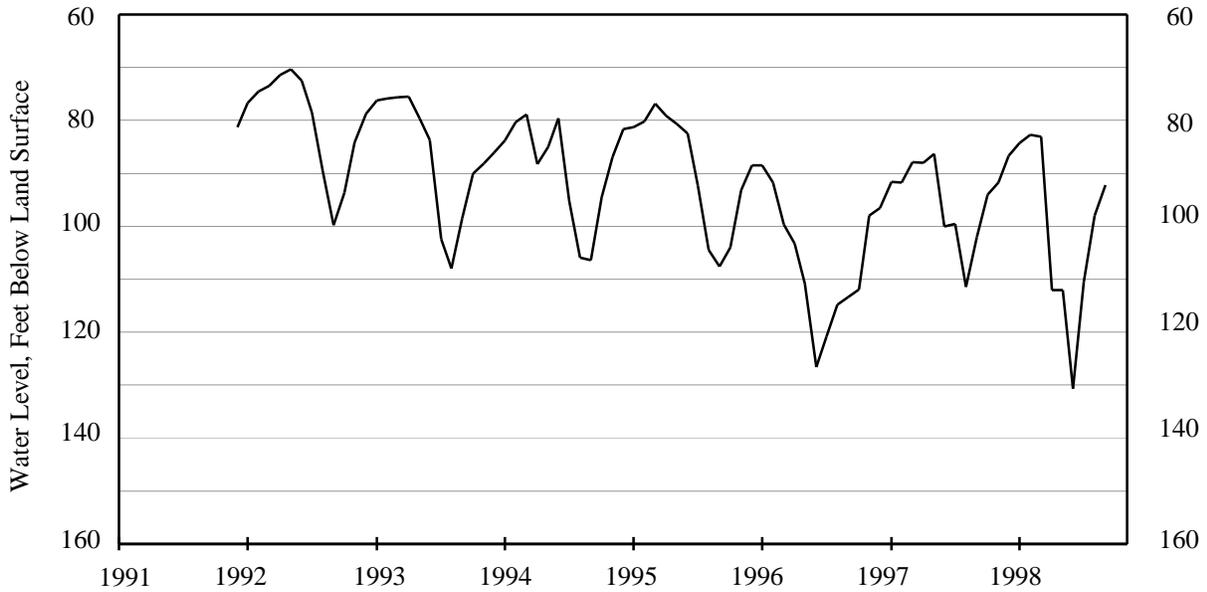


The October water-level measurement in this Evangeline aquifer well # 65-14-409 (incorrectly reported as 65-20-110 in previous newsletters), elevation 66 feet above sea level, was 259.54 feet below land surface. This was 0.16 of a foot above the September measurement of 259.70, 0.22 of a foot above last year's measurement, and 124.04 feet below the initial measurement recorded in 1947.



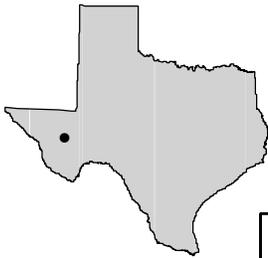
The October water-level measurement in this Edwards aquifer well, elevation 731 feet above sea level, was 44.1 feet below land surface. This was 25.2 feet above the September measurement, 20.2 feet above last year's measurement, and 15.52 feet above the initial measurement recorded in 1962.

**Well No. 68-60-912
Between Poteet and Pleasanton, Atascosa County
Carrizo**



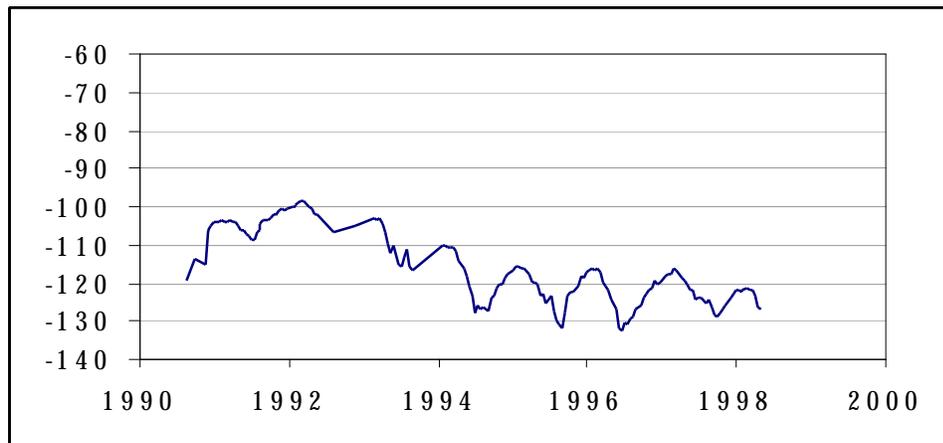
The October water-level measurement in this Carrizo aquifer well, elevation 446 feet above sea level, was 97.96 feet below land surface. This was 12.6 feet above the September measurement, 4.06 feet above last year's measurement, and 16.71 feet below the initial measurement recorded in 1992.

HYDROGRAPH OF THE MONTH



Each month this space features a new hydrograph (marked with the • symbol on the map) depicting different aquifers and different conditions in Texas.

***Well No. 52-34-303
Jeff Davis County, Alpine***



The last water-level measurement in this Igneous Aquifer well, elevation 4,410 feet above sea level, was 122 feet below land surface. Although it is currently unused, the city of Alpine may soon begin using water from this well for municipal supplies. Historically, water levels have shown yearly variations, but have hovered slightly above or below 120 feet since the original measurement of 120 feet in 1984.